

**STATE OF CALIFORNIA**

**AIR RESOURCES BOARD**

**Proposed Regulation to Provide )  
Certification Flexibility for Innovative )  
Heavy-Duty Engines, And California )  
Certification and Installation Procedures )  
For Medium- and Heavy-Duty Vehicle )  
Hybrid Conversion Systems )**

**Hearing Date:  
October 20, 2016**

**COMMENTS OF THE**

**TRUCK AND ENGINE MANUFACTURERS ASSOCIATION**

**October 17, 2016**

**Roger T. Gault  
Timothy A. French  
Truck and Engine Manufacturers Association  
333 West Wacker Drive, Suite 810  
Chicago, Illinois 60606**

**STATE OF CALIFORNIA**  
**AIR RESOURCES BOARD**

**Proposed Regulation to Provide )  
Certification Flexibility for Innovative )  
Heavy-Duty Engines, And California )  
Certification and Installation Procedures )  
For Medium- and Heavy-Duty Vehicle )  
Hybrid Conversion Systems )**

**Hearing Date:  
October 20, 2016**

**COMMENTS OF THE  
TRUCK AND ENGINE MANUFACTURERS ASSOCIATION**

The Truck and Engine Manufacturers Association (“EMA”) hereby submits its comments on the California Air Resources Board’s (“CARB’s”) Proposed Regulation to Provide Certification Flexibility for Innovative Heavy-Duty Engines, and California Certification and Installation Procedures for Medium- and Heavy-Duty Vehicle Hybrid Conversion Systems (“ the Innovative Technology Regulation”).

EMA is the trade association that represents the world’s leading manufacturers of heavy-duty on-highway internal combustion engines and commercial motor vehicles. More specifically, EMA’s members are the manufacturers of the heavy-duty engines and vehicles that CARB anticipates will benefit from the certification flexibility being offered under the proposed Innovative Technology Regulation. Accordingly, EMA and its members have a direct and significant stake in the regulatory proposal at issue.

**I. Overview**

EMA supports CARB’s objective to incentivize heavy-duty engine and vehicle manufacturers to develop and market low-NO<sub>x</sub>, and/or low-GHG-emitting products in California by offering manufacturers a less burdensome certification approval process. That said, the incentives being proposed under the Innovative Technology Regulation are insufficient to achieve CARB’s goals. In addition, the proposed program will not effectively enhance manufacturers’ ability to comply with the new emission standards that CARB is developing to mandate low-NO<sub>x</sub> and Phase 2 GHG emission levels. Simply stated, the Innovative Technology Regulation may not provide sufficient incentives to shift manufacturers’ R&D focus away from the development of other products meeting other current and pending regulatory requirements.

**II. Proposed Regulation**

The proposed Innovative Technology Regulation covers three discrete product types: (i) ultra-low NO<sub>x</sub> emission engines; (ii) heavy-duty hybrid vehicles; and (iii) heavy-duty hybrid retrofits. EMA member companies are directly involved in the manufacture of the first two product categories, and indirectly involved in the third.

The proposed ultra-low NO<sub>x</sub> “certification flexibility” primarily involves reduced OBD system requirements for a limited time. Thus, the proposed OBD flexibility assumes that, in a relatively short amount of time, manufacturers that certify to the ultra-low NO<sub>x</sub> emission standards will be able to overcome the problems associated with meeting the full range of OBD requirements at ultra-low NO<sub>x</sub> emission levels. But the ability to comply with full OBD requirements at ultra-low NO<sub>x</sub> levels is not only unknown, but very much in doubt. For example, a threshold monitor detection limit of 0.2 g/bhp-hr above the standard for an engine certified to the lowest ultra-low NO<sub>x</sub> limit of 0.02 g/bhp-hr is still almost 50% lower than the detection limit for an engine meeting the current 0.2 g/bhp-hr standard requirement (0.4 g/bhp-hr). Sensor and monitor performance at ultra-low levels is highly uncertain due to the inherently poor signal-to-noise ratios that come with low NO<sub>x</sub> (i.e., low signals).

The heavy-duty hybrid certification flexibility involves a two-tier system, where Tier 1 would allow “EMD-plus” in place of OBD, followed by Tier 2 with more limited OBD relief. While OBD compliance relief might be an incentive for manufacturers to provide engines for certain hybrid applications, the relief proposed is not sufficient to justify the R&D expense associated with the creation of a special engine for the limited production volume at issue. Customer interest in heavy-duty hybrid engines has significantly declined due to various economic fundamentals, including fuel costs and the availability of other lower cost technologies. When customers cannot justify the added cost of a hybrid vehicle over a competing vehicle, there is no demand. Similarly, engine manufacturers cannot justify the R&D expense of creating a hybrid-specific engine configuration if sufficient market demand for the engines does not exist.

The proposed heavy-duty hybrid conversion flexibility assumes that engine manufacturers will support the requested engine changes related to the conversion flexibility. There are few cases, however, where that assumption is viable. Providing a regulatory pathway for hybrid conversions will not be sufficient to overcome the significant obstacles to developing conversions, including the engine manufacturers’ concern about needing to make proprietary engine manufacturer information and trade secrets available to converters. Nor will it permit alterations to otherwise certified engine configurations, which under any other circumstance would be deemed illegal tampering.

### **III. Conclusion**

The proposed Innovative Technology Regulation may not be sufficient to incentivize the development of the technologies that CARB is targeting. Rather than trying to pick technology winners, CARB should focus on working with engine and vehicle manufacturers in a collaborative manner to research and develop low-NO<sub>x</sub> and GHG reduction goals that are achievable, harmonized and cost-effective. Adopting piecemeal incentive regulations that are insufficient to promote the targeted technologies does little to address the bigger issues of how to achieve a next tier of low-NO<sub>x</sub> requirements for heavy-duty engines and vehicles.

Respectfully submitted,

TRUCK AND ENGINE  
MANUFACTURERS ASSOCIATION